

# Medicaid Information Technology Architecture (MITA) Overview

## Compiled from MITA Framework 2.0 documents issued by CMS - March 2006

CMS has worked with a number of stakeholders over the past two years to develop the MITA. MITA is both an initiative and a framework. As an initiative, MITA is a plan to promote improvements in the Medicaid enterprise and the systems that support it through collaboration between CMS and the States. As a framework, MITA is a blueprint consisting of models, guidelines, and principles to be used by States as they implement enterprise solutions. MITA is intended to stimulate an integrated business and IT transformation of the Medicaid enterprise in all States and will improve Medicaid program administration by establishing national guidelines for technologies and processes. The MITA Framework is the primary product of the MITA Initiative.

The goal of MITA is to change the way States design and build, change, or modify their Medicaid systems and the manner in which States perform IT investment planning. In the future, States must ensure that their business goals and objectives meet the MITA goals and objectives and must plan MMIS procurements and enhancements within the MITA Framework. To implement the MITA Framework, States will choose the elements that best meet their strategic and tactical IT goals and objectives, and reflect their choices in their APDs. CMS recognizes that different States have differing needs and are likely to begin their participation at different points. The MITA Framework can accommodate an implementation path best suited to each State.

The MITA Framework consists of three parts:

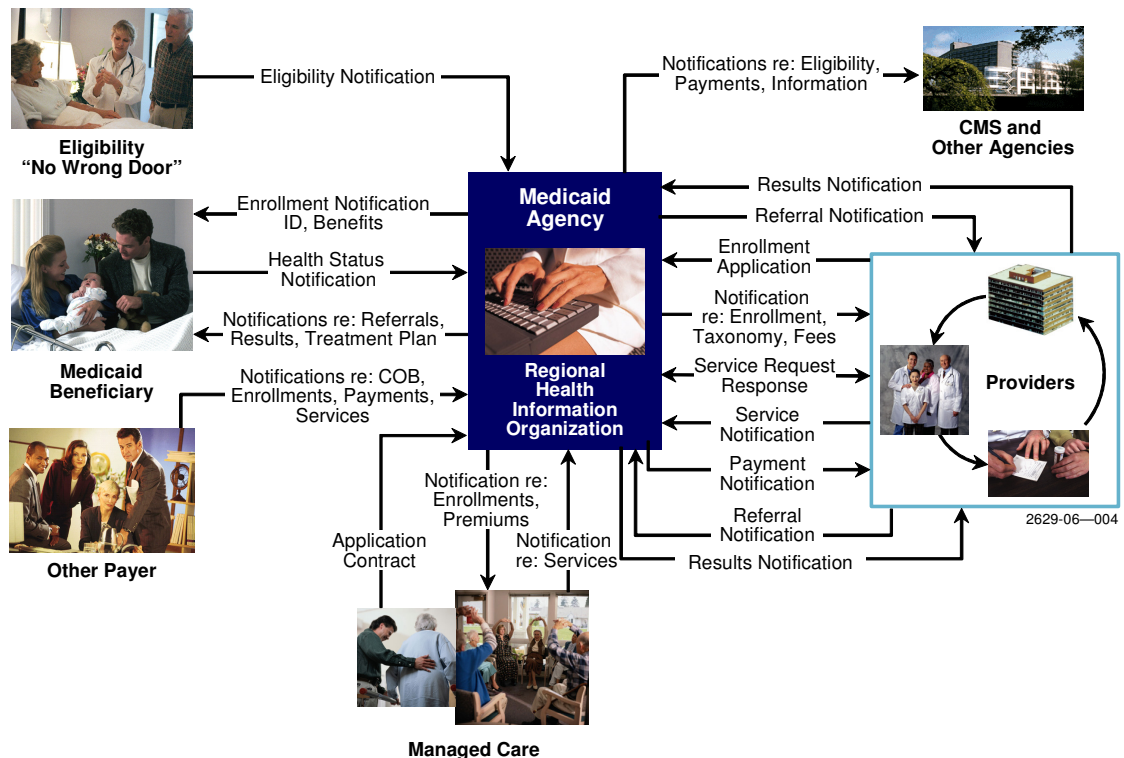
- Business Architecture (BA)
- Information Architecture (IA)
- Technical Architecture (TA)

### *Business Architecture*

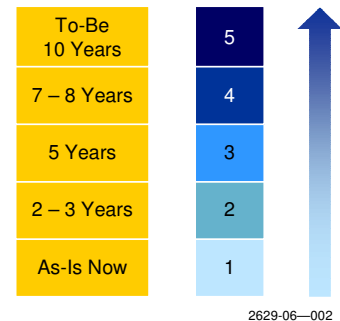
The starting point of the MITA Framework is the BA, in keeping with the guiding principle that MITA “represents a business-driven enterprise transformation.” The BA describes the needs and goals of States and presents a collective vision of the future. The BA acknowledges technology as one of several enablers that are important to growth and transformation, but it does not introduce technical implementations or solutions into the BA components. It focuses on areas of common ground (e.g., that all States must enroll providers and pay for services rendered to eligible beneficiaries and that all States seek to improve healthcare outcomes and improve administrative processes). States will use the BA to assess their own current business capabilities and determine future targets for improvement.

The BA is a conceptual construct that comprises models, matrices, and templates and consists of five components. The:

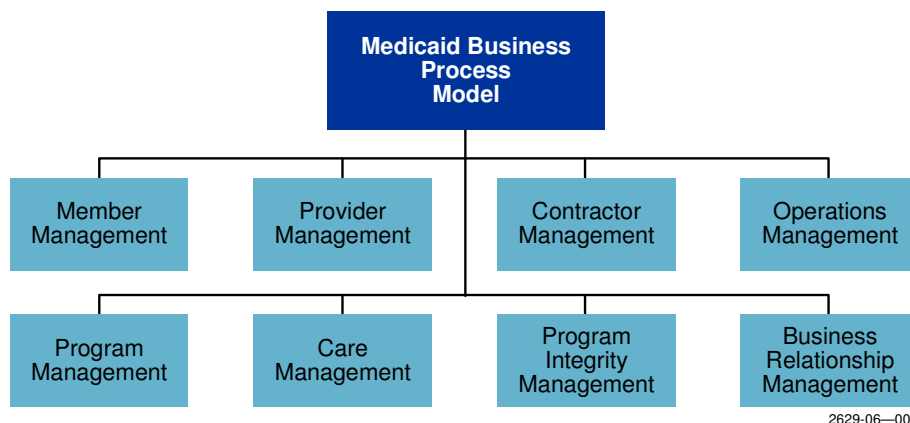
- **Concept of Operations (COO)** is a tool used to describe current business operations and to envision a future transformation that meets the needs of stakeholders and responds to enablers (e.g., new policy, legislation, and technology). The COO is a strategic-planning device to capture the As-Is (i.e., current) context, create the To-Be (i.e., future) vision (see possible To-Be vision below), and level-set expectations before engaging in major transformation projects.

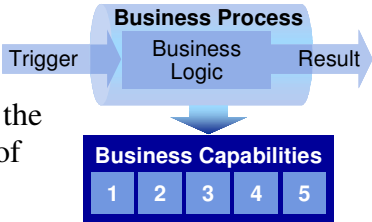


- **MITA Maturity Model (MMM)** is used to illustrate how a business can mature over time. The MMM generally describes the five levels of maturity and the measurable qualities that each level should demonstrate. For example, the MMM states that, at Level 1, the business area or process is characterized by compliance with current regulations. By Level 5, States and local agencies have become interoperable across the country.



- **Business Process Model (BPM)** is a repository of business processes common to most Medicaid programs. Any one State may describe, subdivide, and title its primary business areas differently from the hierarchy presented in the BPM, but all States should be able to map their business processes to it. Some states will have unique processes that must be added to their list. The BPM provides a template for describing each business process. This includes a summary of the business process, trigger event and result, activities, data requirements, predecessor and successor processes, failure points, and other elements. The Framework contains 78 individual business processes in the BPM. The figure below provides an example.



- Business Capability Matrix (BCM)** An organization's *business capability* is its ability to execute a business process at a certain level of maturity as defined in the Business Capability Matrix (BCM). MITA derives business capabilities by applying the MMM to business processes as defined for the BPM. Each business process has as many as five levels of maturity. A State will likely be at different levels for different processes.
 
- State Self-Assessment (SS-A)** is a State's review of its own strategic goals, objectives, and current business capabilities against the MITA BCM. After a self-assessment, the State can develop a list of target capabilities that allow it to meet its strategic goals and objectives. Target capabilities are those capabilities that the State plans to implement to transform its Medicaid enterprise in accordance with MITA principles. CMS plans to ask States to submit an SS-A based on MITA business capabilities in conjunction with the submittal of their Advance Planning Documents (APDs) when requesting funding for system enhancements. CMS plans to use the SS-A when evaluating APDs and RFPs. CMS assumes that if the State wants Federal participation in its efforts to replace a business process, the result should be anticipated improvements.

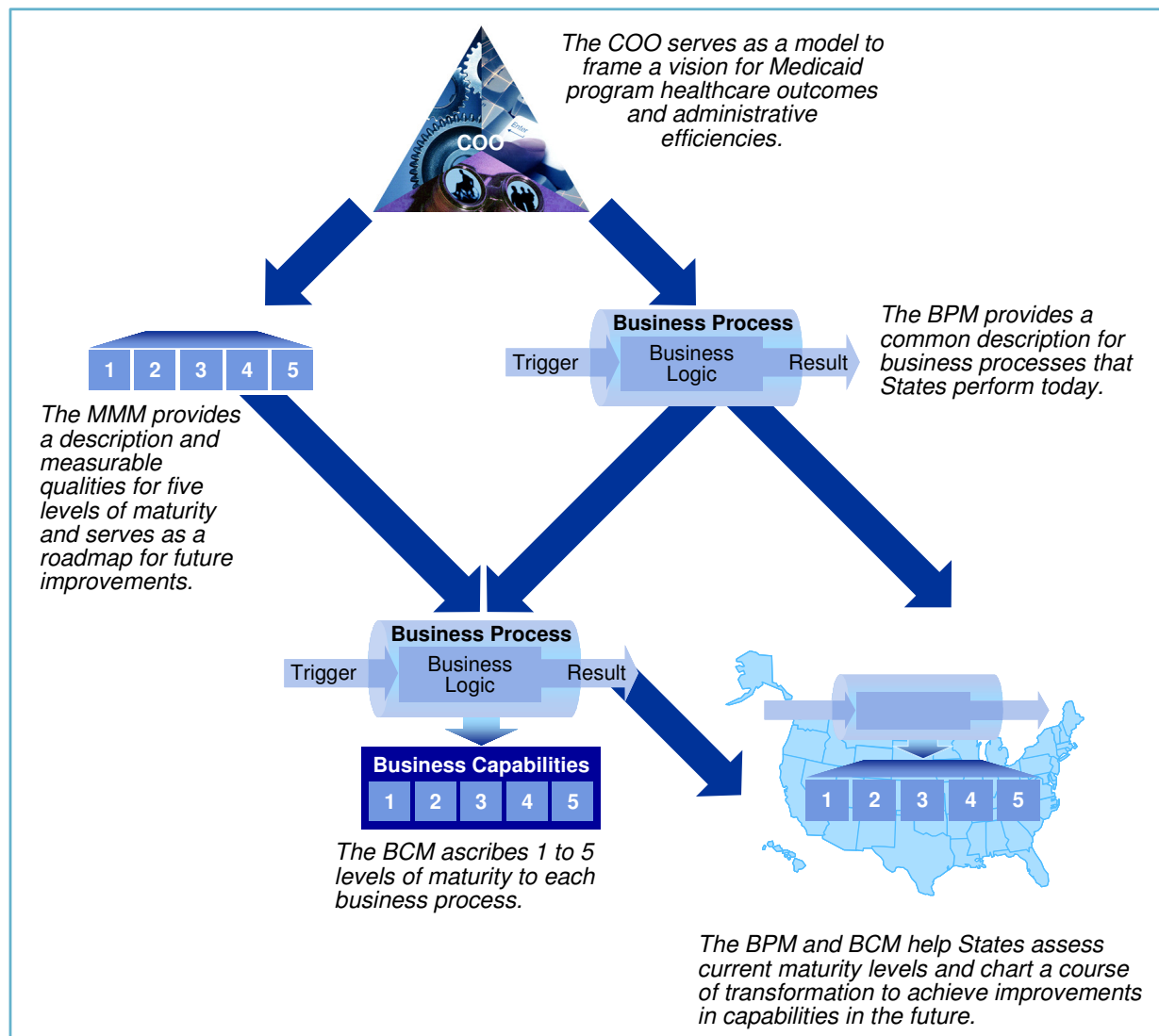
Here is an example of the business process “authorizing service” and how it might look when its business capability is measured against the maturity model definitions:

Level No.	MITA Maturity Model Definition	Business Capability
1	Complies with regulations; mostly manual activities; delays in communicating results	Receipt of and response to requests are accomplished primarily via paper, fax, and phone; policy guidelines applied manually; complies with regulations on turnaround time and accuracy
2	Improvements spearheaded by cost management goals; improvements made in speed of communication and response	Authorization of service given greater priority as a cost-management tool; improvements made in communications; receipt of and responses to requests made via portal; HIPAA standards adopted
3	Information and services shared with other agencies and beneficiary; process streamlined; results improved	Solutions become reusable and sharable because of adoption of standards by State agencies and data-sharing agreements to collaborate on authorization of services

Level No.	MITA Maturity Model Definition	Business Capability
4	Incorporates clinical information into the process to further improve results	Direct access by the authorizing agency to clinical information; automation of requests; decisions by payer automatically rendered as beneficiary's electronic health record is updated by provider; accuracy improved because decisions are based on clinical evidence; manual intervention limited to exceptions
5	Demonstrates widespread interoperability to achieve maximum improvements envisioned at this time	Direct access by the authorizing agency to clinical and administrative information anywhere in the country to confirm or deny the authorization for a service

The BCM serves as a consistent measure of transformation from one level to a higher level.

The following figure shows the relationship among the various components of the BA:



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## *Information Architecture*

The MITA IA identifies the major types of information used by the Medicaid enterprise and provides a conceptual and logical view of that data. It is a consolidation of principles, models, and guidelines that form a template for the States to use to develop their own enterprise IA. Examples of principles include interoperability, data sharing, data quality, data integrity, and data standards. A series of models specify the key elements of information systems that Medicaid enterprises use to execute their business processes including the information itself, the applications that use the information to enable the business processes, and the combining of applications and information to support the enterprise's business functions.

The BA and the IA together map enterprise data to business processes. The IA is also used to identify new business processes and to identify information being collected that has no use. It is imperative that the BA and IA be considered together. The two architectures are connected and aligned through a set of information system requirements that are derived from the BA and fulfilled by the IA. They are meant to be different views of the integrated enterprise architecture, not truly separate architectures.

The primary objectives of an IA are to align information requirements with Medicaid enterprise vision and direction, improve system effectiveness, facilitate growth and innovation, lower overall life-cycle costs and enable interoperability and data sharing. The MITA IA provides a description of the information strategy, architecture, and data to a sufficient level that States can use it to define the data needs that will enable the future business processes of their Medicaid enterprise.

The MITA IA consists of four components. The:

- **Data Management Strategy (DMS)** provides the approach to integrating and organizing data. It uses government and industry best practices to provide the techniques, processes, and products to meet Medicaid's need for timely, accurate information. The DMS provides a structure that facilitates the development of information/data that can be effectively shared across a State's Medicaid enterprise boundaries to improve mission performance.
- **Conceptual Data Model (CDM)** is a model used to represent the overall structure of information at a conceptual level in the Medicaid enterprise. This model will be used primarily as a communication tool between the business user and the IT architect to obtain agreement on the scope of the data and relationships and to facilitate the identification of subject areas. The CDM represents the overall logical structure of the data, which is independent of software or data storage structure, and provides a formal representation of the data needed to run an enterprise or business activity.
- **Logical Data Model (LDM)** is a data model used to identify the data classes and attributes needed to specify the information/data needed by a MITA business process, business service, technical function or technical service. It represents all of the data elements that are in motion in the system or shared within the Medicaid enterprise and how they relate to each other. The MITA LDM does not include State-specific data objects and relationships.
- **Data Standards (DS)** consist of a collection of standards applicable to the administration and operation of a Medicaid enterprise and identifies the applicable

standard for each MITA data element. Each standard is defined by a number of attributes, such as data element name, definition, and type.

### *Technical Architecture*

The MITA TA describes the current and future (near-term and long-term) technical methodologies, tools and standards that a State can use to plan and specify the future IT systems of a State Medicaid enterprise. It provides an IT staff (State or vendor) with guidance and specifics on how to implement the MITA initiative. The components of the TA provide an integrated logical architecture that provides the standardization, interoperability, and flexibility required by the various State Medicaid enterprises.

The purpose of the TA is to provide States and vendors with:

- A common vision of the future for all State Medicaid programs (i.e., principles, goals, objectives, and technical capabilities)
- A common logical infrastructure for Medicaid business processing and information exchange
- Common requirements for implementation (i.e., business services, technical services, and infrastructure)
- Standard reusable components (i.e., business and technical services)
- A repository of solutions (i.e., solution sets)
- A reference set of appropriate technical standards

Key concepts important to the MITA TA are:

- **Service-Oriented Architecture (SOA)** The MITA has adopted SOA as the basis of its technical architecture. SOA is an application architecture within which business functions and selected technical functions are performed using interfaces. A service is a building block that is designed to perform a defined function or functions and which communicates with other defined services through messaging. A SOA framework can incorporate and integrate many different technologies which communicate with each other.
- **Technical Capability Matrix (TCM)** Similar to the Business Capability Matrix, the TCM defines how a technical function will change as it matures over a 10-year period.

*In conclusion*, MITA is designed to improve access to information, to do away with most manual activities, and to transform the Medicaid business and technology over the next decade.